

October 20, 2014

VIA ELECTRONIC MAIL

Public Employees Retirement Board
100 North Park, Suite 200
Helena, Montana 59620

Re: PERS June 30, 2014 Actuarial Results With House Bill 454 Future GABA Changes

Dear Members of the Board:

House Bill 454 (HB 454) enacted during the 2013 legislative session, made changes to the Public Employees' Retirement System (PERS) with respect to enhanced funding and reductions in levels of the Guaranteed Annual Benefit Adjustment (GABA). Since enactment of HB 454 and after the 2013 actuarial valuation results had been communicated, a lawsuit was filed requesting that the GABA provisions contained in HB 454 be invalidated and that the prior GABA provisions be reinstated. On December 20, 2013, a preliminary injunction was issued temporarily reverting back to the GABA provisions specified by the Code prior to the enactment of HB 454. The order is to remain in effect until the Court can issue further rulings on the case.

The actuarial valuation for PERS as of June 30, 2014 recognizes the injunction set by the court and includes the funding changes, but assumes a future GABA based on the Code prior to enactment of HB 454. The Board has requested a supplemental actuarial valuation report that fully recognizes all the provisions of HB 454, including the reduction in GABA. The purpose of this report is to provide the results of this supplemental actuarial valuation.

Data, Methods and Assumptions

The calculations in this letter are based upon the data, actuarial methods, assumptions and plan provisions as were used in the Actuarial Valuation of the System as of June 30, 2014, except for retaining the GABA provisions as were in the law with the passing of HB 454.

In preparing this letter, we relied on information (some oral and some written) supplied by the staff of the Public Employee Retirement Administration. This information includes, but is not limited to, plan provisions, employee data, and financial information. We performed an informal examination of the obvious characteristics of the data for reasonableness and consistency in accordance with Actuarial Standard of Practice No. 23.

The actuarial assumptions reflect our understanding of the likely future experience of the System and the assumptions as a whole represent our best estimate for the future experience of the System. The results of this letter are dependent upon future experience conforming to these assumptions. To the extent that future experience deviates from the actuarial assumptions, the costs of benefits would vary from our projections.



Valuation Results

The results of the supplemental actuarial valuation are shown in the enclosed Attachments.

- Attachment A: Summary
- Attachment B: Liabilities
- Attachment C: Contributions
- Attachment D: Future Outlook
- Attachment E: Supplemental Assumptions
- Attachment F: Supplemental HB 454 Plan Provisions (temporary injunction ignored)

Certification

We hereby certify that, to the best of our knowledge, this letter and its contents have been prepared in accordance with generally recognized and accepted actuarial principles and practices which are consistent with the Code of Professional Conduct and applicable Actuarial Standards of Practice set out by the Actuarial Standards Board. Furthermore, as credentialed actuaries, we meet the Qualification Standards of the American Academy of Actuaries to render the opinion contained in this letter. This letter does not address any contractual or legal issues. We are not attorneys and our firm does not provide any legal services or advice.

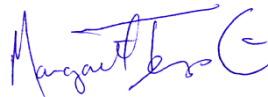
This letter was prepared exclusively for Montana Public Employees' Retirement System for the purposes described herein. This letter is not intended to benefit any third party, and Cheiron assumes no duty or liability to any such party.

If you have any questions or need additional information, please feel free to contact us.

Sincerely,
Cheiron



Stephen T. McElhaney, FCA, FSA
Principal Consulting Actuary



Margaret Tempkin, FSA
Principal Consulting Actuary

Attachments

ATTACHMENT A SUMMARY

The following table compares the results at June 30, 2014, both (i) fully recognizing the House Bill 454 (HB 454) changes and (ii) disregarding changes to GABA contained in HB 454. These are compared to the June 30, 2013 valuation results, which fully recognized HB 454. The results shown in the right-hand column below are the same as contained in the June 30, 2014 actuarial valuation report for the System, and are shown here for comparative purposes. The June 30, 2014 results shown in the remainder of this supplemental report fully recognize the future GABA changes within HB 454, except as otherwise noted.

Table A-1 Montana Public Employees' Retirement System Summary of Plan Changes			
Valuation as of:	Full Recognition HB 454 June 30, 2013	Full Recognition HB 454 June 30, 2014	Prior GABA Provisions June 30, 2014
<u>Assets and Liabilities</u>			
Actuarial Liability (AL)	\$ 5,160,950,992	\$ 5,480,701,888	\$ 6,177,504,549
Actuarial Value of Assets (AVA)	<u>4,139,921,129</u>	<u>4,595,805,330</u>	<u>4,595,805,330</u>
Unfunded AL (AL – AVA)	\$ 1,021,029,863	\$ 884,896,558	\$ 1,581,699,219
Less: PCR-UAL	<u>8,749,140</u>	<u>5,903,188</u>	<u>5,903,188</u>
Net Unfunded AL	\$ 1,012,280,723	\$ 878,993,370	\$ 1,575,796,031
Funded Ratio (AVA/AL)	80.2%	83.9%	74.4%
<u>Contributions as a Percentage of Payroll</u>			
Statutory Funding Rate*	18.78%	19.36%	19.36%
Less: Transfer to DB Ed Fund	<u>0.04%</u>	<u>0.04%</u>	<u>0.04%</u>
Net Statutory Funding Rate	18.74%	19.32%	19.32%
Normal Cost Rate	10.90%	10.44%	11.63%
Administrative Expense	N/A	0.27%	0.27%
Available for Amortization of UAL	7.84%	8.61%	7.42%
Period to Amortize	14.5 years	10.5 years	29.3 years
Projected 30-year Level Funding Rate	15.75%	14.84%	19.27%
Projected Shortfall (Surplus)	(3.03%)	(4.52%)	(0.09%)

* Full recognition of HB 454 assumes temporary levels of contributions remain in effect.

ATTACHMENT B LIABILITIES

Several types of liabilities are calculated and presented in this letter. Each type is distinguished by the people ultimately using the figures and the purpose for which they are using them. A more complete description of each appears in the June 30, 2014 actuarial valuation report for the System.

The following table discloses each of these liabilities for the current valuation, utilizing GABA provisions contained in law before adoption of House Bill 454, and compared to the prior valuation. With respect to each disclosure, a subtraction of the appropriate value of system assets yields, for each respective type, a **net surplus** or an **unfunded liability**.

Table B-1 Liabilities/Net (Surplus)/Unfunded <i>Full Recognition HB 454</i>		
	June 30, 2013	June 30, 2014
<u>Present Value of Benefits</u>		
Active Participant Benefits	\$ 3,085,032,331	\$ 3,116,870,284
Retiree and Inactive Benefits	2,949,478,004	3,216,152,651
Present Value of Benefits (PVB)	\$ 6,034,510,335	\$ 6,333,022,935
Market Value of Assets (MVA)	\$ 4,299,238,343	\$ 4,942,769,917
Future Member Contributions	594,123,899	587,542,773
Future Employer Contributions *	848,628,947	844,188,268
Funding Shortfall/(Surplus)	292,519,146	(41,478,023)
Total Resources	\$ 6,034,510,335	\$ 6,333,022,935
<u>Actuarial Liability</u>		
Present Value of Benefits (PVB)	\$ 6,034,510,335	\$ 6,333,022,935
Present Value of Future Normal Costs (PVFNC)	873,559,343	852,321,047
Actuarial Liability (AL=PVB-PVFNC)	5,160,950,992	5,480,701,888
Actuarial Value of Assets (AVA)	4,139,921,129	4,595,805,330
Net (Surplus)/Unfunded (AL – AVA)	\$ 1,021,029,863	\$ 884,896,558
<u>Present Value of Accrued Benefits</u>		
Present Value of Benefits (PVB)	\$ 6,034,510,335	\$ 6,333,022,935
Present Value of Future Benefit Accruals (PVFBA)	1,491,306,909	1,511,806,688
Present Value of Accrued Benefits (PVAB=PVB-PVFBA)	\$ 4,543,203,426	\$ 4,821,216,247
Market Value of Assets (MVA)	\$ 4,299,238,343	\$ 4,942,769,917
Net Unfunded (PVAB – MVA)	\$ 243,965,083	\$ (121,553,670)

* Includes Employer, State, DC/ORP, and Coal Tax contributions.

ATTACHMENT B LIABILITIES

Changes in Liabilities

Below, we present key changes in liabilities since the last valuation, fully recognizing House Bill 454 for both the June 30, 2013 and June 30, 2014 results. On the next page, we provide more detail on the sources of the actuarial (gain)/loss as measured on the basis of actuarial liability.

Table B-2 <i>Full Recognition HB 454</i>			
	Present Value of Benefits	Actuarial Liability	Present Value of Accrued Liability
Liabilities June 30, 2013	\$ 6,034,510,335	\$ 5,160,950,992	\$ 4,543,203,426
Liabilities June 30, 2014	6,333,022,935	5,480,701,888	4,821,216,247
Liability			
Increase (Decrease)	298,512,600	319,750,896	278,012,821
Change Due to:			
Actuarial (Gain)/Loss	NC*	102,643,341	NC*
Plan Changes	0	0	0
Benefits Accumulated and Other Sources	298,512,600	217,107,555	278,012,821

* NC = not calculated.

ATTACHMENT B
LIABILITIES

Table B-3
Summary of Actuarial Gains and Losses as of June 30, 2014
Full Recognition HB 454

Actuarial Liabilities as of June 30, 2013	\$ 5,160,950,992
Normal Cost	126,754,183
Actual Benefit Payments	(307,741,308)
Interest	<u>398,094,680</u>
Expected Actuarial Liability as of June 30, 2014	\$ 5,378,058,547
Actuarial Liability as of June 30, 2014	\$ 5,480,701,888
Liability (Gain)/Loss	\$ 102,643,341
Sources of Liability (Gain)/Loss	
Salary (Gain)/Loss	\$ (10,464,806)
New Participant (Gain)/Loss	12,019,348
Active Retirements (Gain)/Loss	491,070
Active Terminations (Gain)/Loss	(1,386,842)
Active Deaths (Gain)/Loss	814,507
Active Disability (Gain)/Loss	(1,164,084)
Inactive Mortality (Gain)/Loss	8,216,033
Inactive GABA Granted (Gain)/Loss	78,138,347
Other (Gain)/Loss	15,979,768
Actuarial Liability as of June 30, 2014	\$ 5,480,701,888
Liability (Gain)/Loss due to Plan Changes	\$ 0
Actuarial Value of Assets as of June 30, 2013	\$ 4,139,921,129
Net Cash Flow	(85,220,971)
Expected Earnings	<u>317,603,192</u>
Expected Actuarial Value of Assets as of June 30, 2014	4,372,303,350
Actuarial Value of Assets as of June 30, 2014	\$ 4,595,805,330
Investment (Gain)/Loss	\$ (223,501,980)
Total Liability (Gain)/Loss	<u>102,643,341</u>
Total Actuarial (Gain)/Loss	\$ (120,858,639)

ATTACHMENT B LIABILITIES

Table B-4 shows the actuarial liabilities as of the current valuation, utilizing the full GABA provisions contained in House Bill 454, and compared to the prior valuation. The unfunded actuarial liability is the difference between the actuarial liability and the actuarial value of assets. The funded ratio is the ratio of the actuarial value of assets to the actuarial liability.

Table B-4 Actuarial Liabilities for Funding Full Recognition HB 454		
	June 30, 2013	June 30, 2014
1. Actuarial Liabilities		
Retiree and Inactive Benefits	\$ 2,949,478,004	\$ 3,216,152,651
Active Member Benefits	<u>2,211,472,988</u>	<u>2,264,549,237</u>
Total Actuarial Liability	\$ 5,160,950,992	\$ 5,480,701,888
2. Actuarial Value of Assets	\$ 4,139,921,129	\$ 4,595,805,330
3. Unfunded Actuarial Liability	\$ 1,021,029,863	\$ 884,896,558
4. Funded Ratio	80.2%	83.9%

Montana Code Annotated (MCA) 19-2-407 requires an analysis of how market performance is affecting the actuarial funding of the System. Table B-5 presented below shows the same information as in Table B-4 above, but using market value of assets rather than actuarial value of assets.

Table B-5 Actuarial Liabilities on Market Value Basis (MCA 19-2-407) Full Recognition HB 454		
	June 30, 2013	June 30, 2014
1. Actuarial Liabilities		
Retiree and Inactive Benefits	\$ 2,949,478,004	\$ 3,216,152,651
Active Member Benefits	<u>2,211,472,988</u>	<u>2,264,549,237</u>
Total Actuarial Liability	\$ 5,160,950,992	\$ 5,480,701,888
2. Market Value of Assets	\$ 4,299,238,343	\$ 4,942,769,917
3. Unfunded Actuarial Liability	\$ 861,712,649	\$ 537,931,971
4. Funded Ratio	83.3%	90.2%

ATTACHMENT B LIABILITIES

Under MCA 19-3-1605, the Guaranteed Annual Benefit Adjustment (GABA) as of any January 1 will be 1.5%, but must be reduced if the funded ratio is less than 90% as of the prior actuarial valuation date. The calculation of the funded ratio for this purpose is done assuming that all future GABAs will be 1.5% and future employee contributions will remain level at 7.9%, which results in lower actuarial liabilities than have been presented previously within this section. The calculation as of June 30, 2014, is shown in the table below:

Table B-6	
Actuarial Funded Ratio for GABA Determination	
	June 30, 2014
1. Actuarial Liabilities	
Retiree and Inactive Benefits	\$ 3,222,926,515
Active Member Benefits	<u>2,251,596,254</u>
Total Actuarial Liability	\$ 5,474,522,769
2. Actuarial Value of Assets	\$ 4,595,805,330
3. Unfunded Actuarial Liability	\$ 878,717,439
4. Funded Ratio	83.9%

MCA 19-3-1605 provides that for each full 2% that the funded ratio is less than 90%, the GABA must be reduced by 0.1%. Therefore, the funded ratio determined above is considered 84% and would cause a reduction in the GABA rate as of January 1, 2015 from 1.5% to 1.2%.

MCA 19-3-1605 also provides that if the amortization period is 40 years or greater then, the GABA must be set at 0%. This calculation appears in Attachment C of this supplemental report and indicates that the amortization period does not exceed 40 years.

ATTACHMENT C CONTRIBUTIONS

The tables below present and compare the contribution rates for the System for this valuation and the prior one. Results from the June 30, 2013 valuation utilizing GABA provisions contained in law after adoption of House Bill 454 are used in this development.

Table C-1 Statutory Basis <i>Full Recognition HB 454</i>		
	June 30, 2013	June 30, 2014
Statutory Funding Rates		
Members	7.90%	7.90%
Employers and State ¹	8.17%	8.27%
Coal Tax Contributions	2.61%	3.09%
DC/ORP Contributions	<u>0.10%</u>	<u>0.10%</u>
Total	18.78%	19.36%
Transfer to Education Fund	<u>0.04%</u>	<u>0.04%</u>
Net Contribution to DBRP	18.74%	19.32%
Normal Cost Rate ²	10.90%	10.44%
Administrative Expense	N/A	0.27%
Funding Rate Available for Amortization	7.84%	8.61%
Unfunded Actuarial Liability (Surplus)	\$ 1,021,029,863	\$ 884,896,558
Less: PCR-UAL	8,749,140	5,903,188
UAL Funded by DBRP	\$ 1,012,280,723	\$ 878,993,370
Years to Amortize ³	14.5 years	10.5 years

¹ Rates shown are for the fiscal year following the valuation date. The allocation of the rate between Employers and the State is described in Appendix C, item 2, of the PERS Actuarial Valuation report as of June 30, 2014.

² The normal cost rate is projected to be 9.28% for members eligible after July 1, 2011. It is expected that the average normal cost rate will decrease over the next generation of active plan members.

³ On a market value basis, the unfunded actuarial liability was 11.6 years at June 30, 2013 and was 5.9 years at June 30, 2014.

ATTACHMENT C CONTRIBUTIONS

Table C-2 Calculated Contribution Basis <i>Full Recognition HB 454</i>		
	June 30, 2013	June 30, 2014
Normal Cost Rate	10.90%	10.44%
Educational Fund	0.04%	0.04%
Amortization Payment (30-years)	4.81%	4.09%
Administrative Expense	<u>N/A</u>	<u>0.27%</u>
Total Calculated Contribution Rate	15.75%	14.84%
Less Statutory Rate	<u>18.78%</u>	<u>19.36%</u>
Shortfall (Surplus) in Statutory Rate	(3.03%)	(4.52%)

Table C-3 Calculated Contribution on Market Value (MCA 19-2-407) <i>Full Recognition HB 454</i>		
	June 30, 2013	June 30, 2014
Normal Cost Rate	10.90%	10.44%
Educational Fund	0.04%	0.04%
Amortization Payment (30-years)	4.05%	2.47%
Administrative Expense	<u>N/A</u>	<u>0.27%</u>
Total Calculated Contribution Rate	14.99%	13.22%
Less Statutory Rate	<u>18.78%</u>	<u>19.36%</u>
Shortfall (Surplus) in Statutory Rate	(3.79%)	(6.14%)

The following table shows the expected results for the next five valuations (assuming all assumptions are met, including 7.75% return).

Table C-4 * Projected Actuarial Contribution Rates	
Valuation Year	Rate
2015	14.43%
2016	13.30%
2017	12.46%
2018	12.09%
2019	11.70%

* These projections reflect the plan, contribution, and GABA changes associated with House Bill 454, and assume that all future GABAs will be at the maximum statutory rate of 1.5% per year.

ATTACHMENT C CONTRIBUTIONS

Calculations of the amortization period of the unfunded actuarial liability are also required using the basis applied for purposes of Table B-6; that is, assuming that all future GABAs will be at the rate of 1.5%. Tables C-5 and C-6 are prepared on that basis.

Under MCA 19-3-1605, the GABA as of the next January 1 must be 0%, if the amortization period under this calculation basis is 40 years or greater. This calculation is shown in the table below:

Table C-5	
Amortization Period for GABA Determination	
	June 30, 2014
Net Contribution to DBRP	19.32%
Normal Cost Rate	10.78%
Administrative Expense	0.27%
Funding Rate Available for Amortization	8.27%
Years to Amortize	10.9 years

Since the amortization period in Table C-5 is less than 40 years, the GABA as of January 1, 2015 will not be automatically set at 0%, but will be determined based upon Table B-6.

Under MCA 19-3-315 and MCA 19-3-316, certain temporary member and employer contributions will cease as of the next January 1, if the amortization period without regard to these contributions would not cause the amortization period to exceed 25 years. This calculation is shown below:

Table C-6	
Amortization Period Without Temporary Contributions	
	June 30, 2014
Net Contribution to DBRP	16.85%
Normal Cost Rate	10.78%
Administrative Expense	0.27%
Funding Rate Available for Amortization	5.80%
Years to Amortize	17.3 years

Since the amortization period in Table C-6 is below 25 years, there would be a reduction in member and employer contribution rates as of January 1, 2015.

ATTACHMENT D FUTURE OUTLOOK

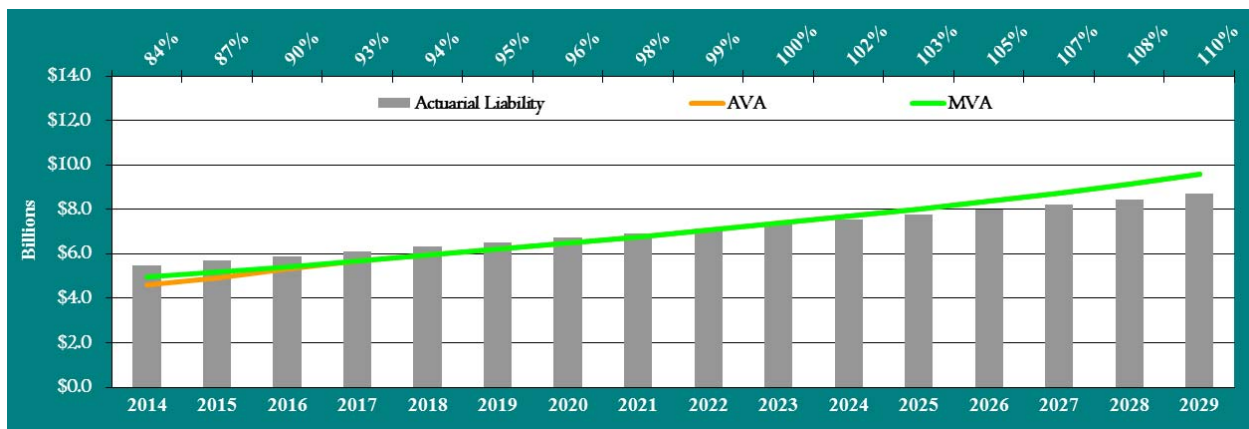
Future Outlook

Baseline Projections

These graphs show the expected progress of the System over the next 15 years assuming the System's assets earn 7.75% on their *market value*, and that contributions continue to be made at the current statutory rates.

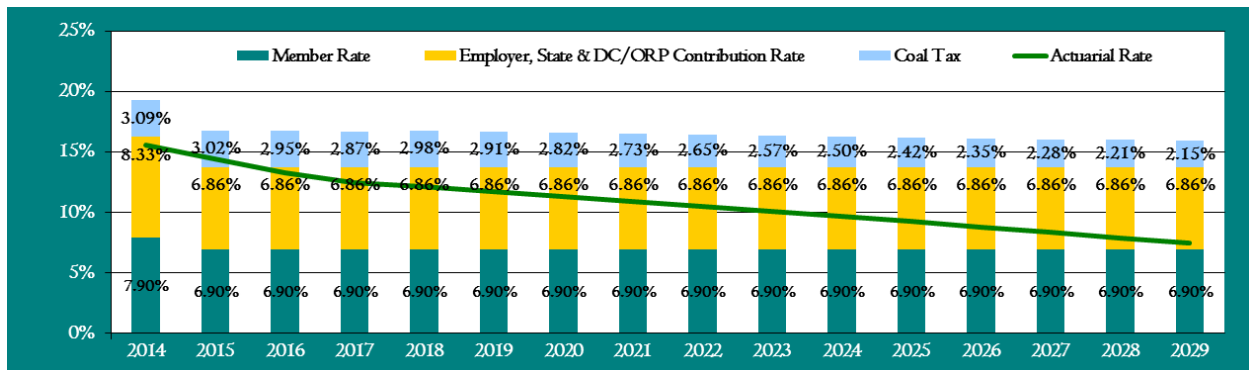
These projections as well as all of the projections that follow reflect the plan, contribution, and GABA changes associated with House Bill 454, and assume that all future GABAs will be at the maximum statutory rate of 1.5% per year.

The chart below shows the funded status of the System would be expected to gradually increase over the 15-year period, eventually reaching a funded ratio of 110% by the end of the period.



The chart below shows the total contribution (Member, Employer, State, DC/ORP and Coal Tax) computed based on a 25-year amortization of the unfunded actuarial liability, which is the statutory threshold for determining whether employer and employee contribution rates can be reduced. The temporary Member and Employer rates are expected to cease as of January 1, 2015. Coal tax contributions are projected at the levels shown using information provided by the Governor's Office of Budget and Program Planning.

These amounts are compared to an Actuarial Rate, which is calculated as the normal cost, administrative expense, and a level percent of pay 25-year open amortization of the unfunded actuarial liability. The Actuarial Rate is projected to decline over the projection period.



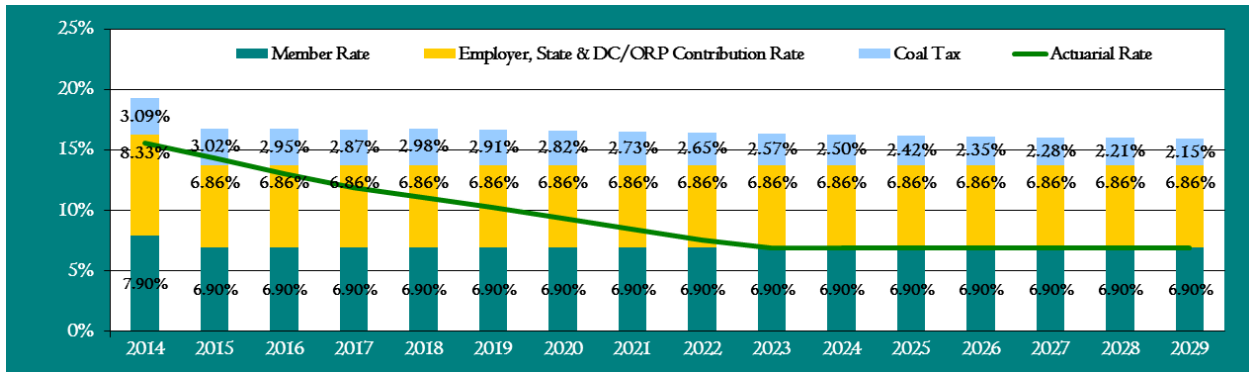
ATTACHMENT D FUTURE OUTLOOK

Projections with Asset Returns of 9.25%

The future funding status of this System will be impacted by the investment earnings. Changes in market returns can have significant effects on the System's status. These two charts below show what the next 15 years would look like with a 9.25% annual return in each year (i.e. 1.5% greater than the assumed rate of return).



Compared to the baseline projections, the funded status improves more rapidly over the 15-year period. The Actuarial Rate decreases quicker, with the temporary contributions still having ceased beginning in 2015. The Employer, State and DC/ORP portions drop to zero in the fiscal year ending 2023.



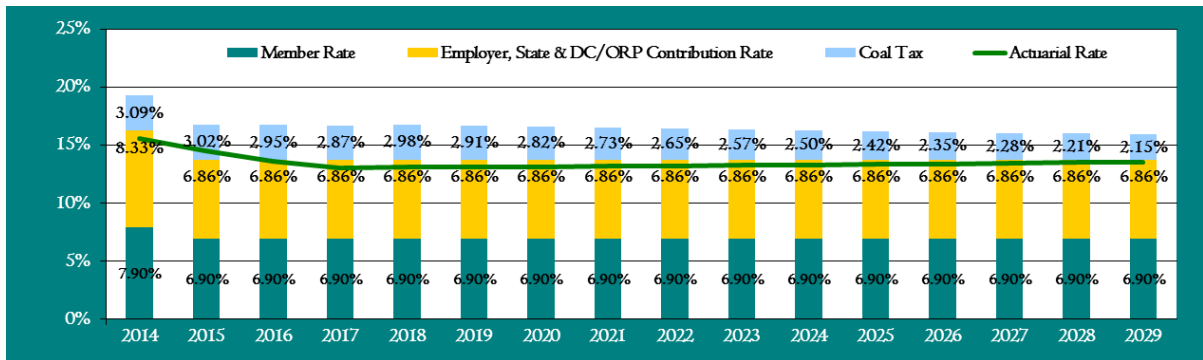
ATTACHMENT D FUTURE OUTLOOK

Projections with Asset Returns of 6.25%

To further demonstrate how fluctuations in the earnings rate can impact funding, we show the anticipated System funding projections if the invested assets earn 6.25% per year over the entire 15-year period (i.e., 1.5% less than the assumed rate of return).



Under this scenario, the funded status slightly increases as previous investment gains are realized, and then begins to decline. The Actuarial Rate initially drops and then begins to increase remaining below the statutory rate through the period. The temporary contributions would still cease in 2015.



ATTACHMENT E SUPPLEMENTAL ASSUMPTIONS

1. Assumptions related to the Guaranteed Annual Benefit Adjustment (GABA)

- a. For all calculations other than those required due to MCA 19-3-315, 19-3-316, and 19-3-1605, the rate of GABA is assumed to be as follows:

January 1, 2014:	1.2%
January 1, 2015:	1.4%
January 1, 2016 and later:	1.5%

- b. For calculations required due to MCA 19-3-315, MCA 19-3-316 and MCA 19-3-1605, GABA is assumed to be 1.5% for all future years.

2. Assumptions related to future member contribution rates

- a. For all calculations other than those required due to MCA 19-3-315, 19-3-316, and 19-3-1605, it is assumed that the member contribution rate will be reduced from 7.9% to 6.9% at January 1, 2015.
- b. For calculations required due to MCA 19-3-315, MCA 19-3-316 and MCA 19-3-1605, the member contribution rate is assumed to be 7.9% for all future years.

3. Changes since Last Valuation

Assumptions have been updated with respect to future GABA percentages.

ATTACHMENT F
SUPPLEMENTAL HB 454 PLAN PROVISIONS
Full Recognition of HB 454 GABA Provisions

1. Post Retirement Benefit Increases

Includes current and future retirees, regardless of when they retired or the date they will retire in the future.

- a. GABA is a maximum of 1.5% for all current and future retirees for each year PERS is funded at or above 90%.
- b. The 1.5% GABA is reduced 0.1% for each 2% PERS is funded below 90%.
- c. GABA is 0% for all current and future retirees whenever the amortization period for PERS is 40 years or more.

2. Changes since Last Valuation

None.